

REMARKS

Claim 3 was rejected under 35 U.S.C. §103 for obviousness predicated upon Lin et al. in view of Shermer et al.

In the statement of the rejection the Examiner admitted that Lin et al. failed to disclose a semiconductor device as claimed wherein the heat sink plate has concavo-convex portions and wherein the convex portions do not protrude from the surface of the sealing member to the outside, clearly omitting other significant differences. The Examiner then concluded that one having ordinary skill in the art would have been motivated to modify the semiconductor device disclosed by Lin et al. to provide the heat dissipation system proposed by Shermer et al. This rejection is traversed.

As previously pointed out, there are additional significant differences between the same claimed semiconductor device and that disclosed by Lin et al. Specifically, in accordance with the semiconductor device defined in claim 3, the heat sink plate is fixed by the sealing member which encapsulates the semiconductor chip on the substrate. Accordingly, the heat sink plate can be fixed by the sealing member at the same time the semiconductor chip is encapsulated on the substrate without any special processing and without a special member for attaching the heat sink plate.

In contradistinction to the present invention, it should be apparent that according to the teachings of Lin et al., the thermal coupling layer 58 provided between the heat spreader 54 and the electronic component 18 differs from molded package body 36. This significant difference between the claimed semiconductor device and the device disclosed by Lin et al. is functionally significant. Specifically, the present invention enables a significant reduction in manufacturing costs. Moreover, this significant difference between the claimed invention

and semiconductor device disclosed by Lin et al. is not cured by the secondary reference to Shermer et al. Indeed, there is no apparent factual basis upon which to predicate the conclusion that one having ordinary skill in the art would somehow have been realistically impelled to combine the applied references, or to further modify whatever semiconductor device can be said to have been suggested by the combined disclosures of the applied references, to arrive at the claimed invention absent, of course, improper reliance upon Applicant's disclosure. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985).

Applicant, therefore, submits that the imposed rejection of claim 3 under 35 U.S.C. §103 for obvious predicated upon Lin et al. in view of Shermer et al. is not factually or legally viable and, hence, solicits withdrawal thereof.

Claims 7, 9, 10 and 12 were rejected under 35 U.S.C. §103 for obviousness predicated upon Shermer et al in view of Oogaki et al.

In attempting to establish the requisite motivation for combining the applied reference, the Examiner again offered the following reason for modifying the semiconductor device disclosed by Schneider et al. by providing an engageable/detachable heat sink fin (second full paragraph on page 4 of the August 7 2003 Office Action):

Oogaki et al. disclose the heat sink 7 and the heat sink 8 have engaging portions brought into engagement each other, whereby the engaging portions allow detachment of the heat sink 8 from the heat sink 7 (cover fig., column 4, lines 1-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Schneider et al. and Tao et al. to provide the engaging portions to achieve a positive cooling effect for the package device, as shown by Oogaki et al.

This rejection is traversed.

I. Due Process of Law

Applicants have twice previously responded to this rejection with technical reasoning undermining the Examiner's asserted motivation. Regrettably, the Examiner has ignored Applicants arguments and has conspicuously declined to comment thereon.

Applicants have a right to know whether their arguments have been considered and, if not persuasive, the reasons why Applicants' arguments were not considered persuasive. *In re Mullin*, 481 F.2d 1333, 179 USPQ 97 (CCPA 1973).

II. There is no Motivation

In order to establish the requisite realistic motivation, the Examiner must point to a source in the applied prior art for each claim limitation and a source in the applied prior art for the requisite motivational element. *Smiths Industries Medical System v. Vital Signs Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999). More to the point, the Examiner is required to make a "thorough and searching" factual inquiry and, based upon that factual inquiry and, based upon that factual inquiry, explain why one having ordinary skill in the art would have realistically impelled to modify particular prior art, in this case the particular device disclosed by Schneider et al., to arrive at the claimed invention. *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Such a factual inquiry requires clear and particular factual findings as to a specific understanding or specific technological principle which would have realistically impelled one having ordinary skill in the art to modify the

particular device disclosed by Schneider et al. to arrive at the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000); *In re Dembicza*k, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Merely identifying wherein features of a claimed invention are perceived to reside in disparate references does not establish the requisite motivation. *In re Kotzab, supra*; *Grain Processing Corp. v. American-Maize Products Co.*, 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988). Rather, a **specific reason** must be offered based upon facts to support the asserted motivation--not generalizations. *Ecolochem Inc. v. Southern California Edison, Co. supra*; *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

In applying the above legal tenets to the exigencies of this case, Applicants submit that the requisite realistic motivation element has **not** been established. The reasons why follow and require response.

III. The Asserted "Positive Cooling Effect".

As repeatedly argued throughout prosecution of this application, the device disclosed by Schneider et al. **already has positive cooling**. The engageable/detachable portion of the device disclosed by Oogaki et al. would **not** add positive cooling to the device disclosed by Schneider et al., **because it already has positive cooling**.

Applicants, therefore, would specifically question the Examiner: **Where** do Oogaki et al. link "positive cooling effect" to an engageable/detachment portion? In short, the Examiner's asserted motivation is **devoid of the requisite factual basis**. *In re Lee, supra*.

IV. The Devices of Schneider et al. and Oogaki et al. are different

The heat sink 8/heat sink 7 disclosed by Oogaki et al. is not provided solely for engagement or disengagement, as the Examiner implicitly suggests. Rather, the **reason** for providing second heat sink 8 which is engageably held by the first heat sink 7 in the device disclosed by Oogaki et al. appearing on the face page of the patent, is to **accommodate a variation in the distance (c)** between the electronic parts 4 and the heat sink 7, such that minute **compensation** can be made with ease by turning the threaded heat sink 8 (column 4 of Oogaki et al., lines 23 through 26). Applicant previously argued, and the Examiner has never denied, in the device disclosed by Schneider et al. there is **no variation in distance between the planar substrate 10** because the planar substrate 410 is bonded to the die 306 using adhesive 412. Further, even if there was a variation in distance, such could **not** possible be accommodated by bringing fin 414 into contact with the die 306, because it would be **blocked** by the planar substrate 410. Here, again, the Examiner's reason to modify the device of Schneider et al. achieves **no** objective based on facts. *In re Lee, supra.*

V. The Missing Shield Case

Moreover, the heat radiator disclosed by Oogaki et al. functions by conducting heat to the shield case 5--**an element which does not even exist in the semiconductor device disclosed by Schneider et al.** It is for the purpose of conducting heat to the shield case 5 that the first heat sink 7 is provided and the second heat sink 8 formed such that it is

engageably held by the first heat sink 7, thereby providing a conductive path directly to the shield case 5, again an element does not exist in the device disclosed by Schneider et al. This is another reason why the Examiner's proposed modification of the device disclosed by Schneider et al. would not serve any apparent purpose.

Again, these technological arguments were previously advanced. However, they appear to have fallen upon deaf ears. It is improper for the Examiner to retreat to a mental bunker impenetrable to facts, laws and technological arguments. MPEP §707.07(f). Applicants assume that the Examiner's failure to comment upon the previously advanced arguments is indicative of the fact that the Examiner can not find fault with these arguments. Rather, the Examiner repeats improper generalizations. *Ecolochem Inc. v. Southern California Edison, Co., supra; In re Kotzab, supra*. This approach is legally erroneous for reasons for previously advanced.

It should, therefore, be apparent that the Examiner's reasoning underpinning the asserted motivation is without technological basis. Rather, it would appear that the Examiner has improperly identified features in disparate references and then asserted the obviousness conclusion. This approach is legally erroneous. *In re Kotzab, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); Grain Processing Corp. v. American-Maize Products Co., 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988)*. The only basis to support the requisite motivation is found at Applicant's disclosure which, of course, is forbidden territory upon which the Examiner may trespass in order to excavate for a reason to modify a reference. *Panduit Corp. v. Dennison Mfg. Co., 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985)*.

Based upon the foregoing, Applicant submits that the imposed rejection of claims 7, 9, 10 and 12 under 35 U.S.C. §103 for obviousness predicated upon Schneider et al. in view of Tao et al. and Oogaki et al. is not factually or legally viable and, hence, solicits withdrawal thereof.

It should, therefore, be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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